Montana DEQ – Wetland Rapid Assessment Form (Version 2.0)

Site ID Code: _____	Date of Site Visit:
Site Name: _____	Person(s) Assessing Wetland:
Land Ownership _____	
HUC 4th/5th Code:_____ HUC 4th/5th Name: _____	
Elevation: _____ Determine Location in office from Topographic Map: Datum NAD27 UTM E_____ N_____ Determine location in field with GPS: Datum: NAD83 (use Lat/Long N _____ decimal-degree W _____ coordinates) Error _____ m	Affiliation(s):

General Site Description (Location , Wildlife Observations, Beaver Activity, Outstanding Features, Vegetative Types, observed impacts, etc.)**:**

Photos:

Photo #	Direction Facing	Description of what is in the photo

1.0 Wetland Classification

1.1 Wetland is being assessed to reflect (Circle)

Natural Wetland Type ***(assess potential)***
Altered Wetland Type ***(assess capability)***
Completely Altered ***(no longer functioning as a wetland, and it is not feasible to survey wetland condition)***
****What alterations have been made?*** _____
_____

1.2 HGM Classification (Circle one Class or Subclass)

Riverine	Depressional	Lacustrine Fringe	Slope	Mineral Soil Flats
Upper Perennial	Closed		Open Spring	Playa Lakes
Lower Perennial	Open groundwater		Riverine Spring	
			Fen	
Non-Perennial, Intermittent or Ephemeral	Open surface water		Wet Meadow	

1.3 Cowardin Wetland Classification (*Note: wetlands sites can have more than one system)*

Identify a System, Subsystem, Class, Water Regime, Modifier (if present), and the percent cover of all categories present

System	Subsystem	Class	Water Regimes	Modifiers	Percent
Riverine *(Stream)*	Lower Perennial *(Larger Tributary)*	Rocky Bottom			
		Unconsolidated Bottom			
		Aquatic Bed			
		Emergent Wetland			
		Rocky Shore			
		Unconsolidated Shore			
	Upper Perennial *(Smaller Tributary)*	Rocky Bottom			
		Unconsolidated Bottom			
		Aquatic Bed			
		Rocky Shore			
		Unconsolidated Shore			
	Intermittent	Stream Bed			
Lacustrine *(Lake)*	Limnetic *(Deep water habitat)*	Rocky Bottom			
		Unconsolidated Bottom			
		Aquatic Bed			
	Littoral *(Between Shore and Deepwater Habitat)*	Rocky Bottom			
		Unconsolidated Bottom			
		Aquatic Bed			
		Emergent Wetland			
		Rocky Shore			
		Unconsolidated Shore			
Palustrine *(Pond or riparian)*		Rocky Bottom			
		Unconsolidated Bottom			
		Aquatic Bed			
		Emergent Wetland			
		Rocky Shore			
		Unconsolidated Shore			
		Moss-Lichen Wetland			
		Scrub-Shrub Wetland			
		Forested Wetland			

Determine the wetland area by locating the boundary where wetland dependent vegetation meets vegetation and features not characteristic of wetlands (See guidebook for more information)

Do not include limnetic subsystems which are deep water habitats that are greater than 2 meters (6.6 feet) or the maximum extent of nonpersistent emergents. If these grow at depths greater than 2 m.

Types of Water Regimes and Modifiers

Water Regimes

A = Temporarily Flooded (Wet due to abnormal flood event and will dry up in summer months)
B = Seasonally Flooded
C = Semi-Permanently Flooded (Present for extended periods, often during growing season)
D = Intermittently Exposed (water is present except during years of drought)
E = Permanently Flooded (Flooded every year except possibly in extreme drought)
F = Saturated (Surface water is rarely present)

*If 2 or 3 regimes are present, choose the regime that is most common in the area.

Modifiers

G = Excavated
H = Impounded
I = Diked
J = Partly Drained
K = Farmed
L = Artificial Dam
M = Beaver Dam
N= No Modifier
O= Diverted
P= Rip Rap

Aquatic Bed = plants growing in water
Rocky Bottom/ Shore = cobble or rock along Shore
Unconsolidated Bottom/ Shore = muddy
Emergent = grasses, sedges, rushes, etc.
Scrub-Shrub = Bushes, Vegetation less than 20ft tall
Forested = woody vegetation that is 6 m tall or taller

2.0 Site Characterization *Fill in your observations*

2.1 Are Fish Present? ___Yes ___No ___Not Sure Species (if known)?_____

2.2 Any Amphibian and Aquatic Reptile Species observed? Yes (check and describe life stage below: Eggs, tadpole, adult) No___

Common Name	Describe life Stage	Common Name	Describe Life Stage	Common Name:	Describe Life Stage
Boreal Chorus Frog		Snapping Turtle		Long-toed Salamander	
Bullfrog		Spiny Softshell		Northern Leopard Frog	
Coeur D'Alene Salamander		Tiger Salamander		Pacific Treefrog	
Columbia Spotted Frog		Western Hognose Snake		Painted Turtle	
Common Gartersnake		Western Terrestrial Gartersnake		Plains Garter Snake	
Great Plains Toad		Western Toad		Plains Spadefoot	
Western Skink		Woodhouse's Toad		Rocky Mountain Tailed Frog	
Smooth Greensnake		Species Not Known_____(please describe)_____			

2.3 Estimate the Percent of Standing Water

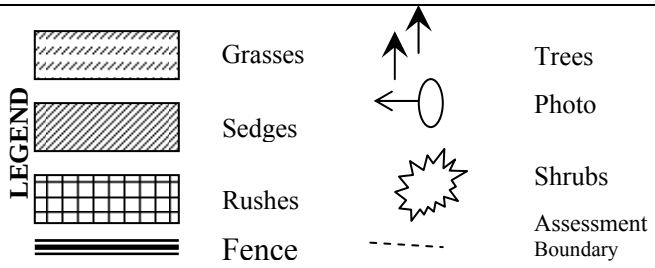
Percentage of standing water body < 50 cm depth	**0**	**1-25**	**26-50**	**51-75**	**76-100**
Percentage of standing water body 50-200 cm depth	**0**	**1-25**	**26-50**	**51-75**	**76-100**
Percentage of standing water body >200 cm depth	**0**	**1-25**	**26-50**	**51-75**	**76-100**

2.4 Were Threatened or Endangered Species observed?

Check:	Endangered or Threatened Species	Region Found	Status
	None Found		
	Least Tern	Near Fort Peck Dam & Miles City	Endangered
	Whooping Crane	Northeastern Montana	Endangered
	Bald Eagle	Entire region	Threatened
	Piping Plover	North-central and Eastern portions of the state	Threatened
	Black-Footed Ferret	Northeastern Montana	Endangered
	Canada Lynx	Entire region	Threatened
	Gray Wolf	Entire region	Threatened/Endangered
	Grizzly Bear	Greater Yellowstone, Northern Continental Divide, Cabinet-Yaak, Bitterroot Selway Ecosystems	Threatened
	Bull Trout	Entire Region	Threatened
	Pallid Sturgeon	Fort Peck & Yellowstone River below Powder River mouth	Endangered
	White Sturgeon	Kootenai River	Endangered
	Water Howellia	Northwestern Montana	Threatened
	Ute Ladies' -Tresses	Southwest and Southcentral Montana	THreatened

Please comment on what was observed (scat, tracks, etc.):_____

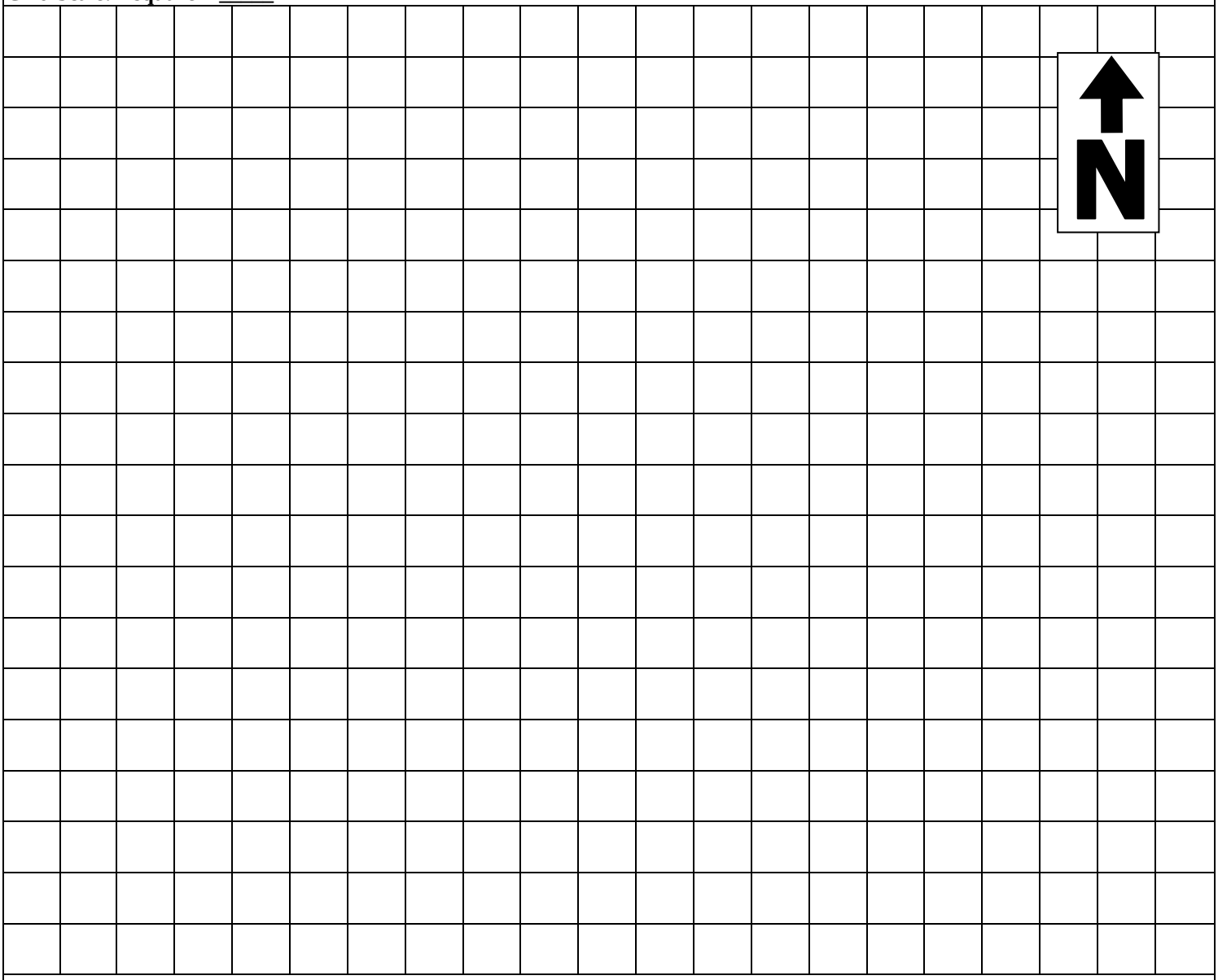
2.5 The type and surface area of emergent vegetation present				
Sedges	**0-25%**	**25-50%**	**50-75%**	**75-100%**
Cattails	**0-25%**	**25-50%**	**50-75%**	**75-100%**
Grasses	**0-25%**	**25-50%**	**50-75%**	**75-100%**
Rushes	**0-25%**	**25-50%**	**50-75%**	**75-100%**
Waterlilies	**0-25%**	**25-50%**	**50-75%**	**75-100%**
Shrubs	**0-25%**	**25-50%**	**50-75%**	**75-100%**
Trees	**0-25%**	**25-50%**	**50-75%**	**75-100%**
Other:____	**0-25%**	**25-50%**	**50-75%**	**75-100%**



2.6 Site Map for Wetland Assessment Area
(site map can be substituted with a high-resolution aerial photo)

For Riverine sites: include length= 100m, width=as wide as outermost meander. For all other sites: 100 m × 100m or the entire wetland, if smaller. Buffer occupies 100m on either side of the wetland. Specifics for determining assessment area are available in the handbook.

Grid Scale: 1 square = _____ m



- Note all photo locations and directions **What is the overall size of the wetland? _____×_____**

3.0 Hydrogeomorphology Condition (Include Addendum for Riverine Wetlands)

Degree of hydrologic disturbance (All Wetland Types)	Non Occurring/ Slight	Moderate	Severe
3.1 Degree of wetland surface or subsurface flow patterns that has been "negatively" altered by human disturbance (e.g., roads, buildings, rip rap, levees, bridges approaches, weirs, dams, etc.) *Consider how structures accommodate safe passage of flows (e.g., lower the rating if headcuts are affecting dam or spillway)	**10**	**4**	**0**
3.2 Degree of wetland habitat negatively altered by addition or withdrawal for irrigation, livestock watering, drainage, etc *Consider impacts from any abnormal fluctuating water levels	**10**	**4**	**0**
3.3 Amount of wetland habitat negatively altered by dredging or filling	**10**	**4**	**0**
3.4 Percent of assessment area and the degree to which the wetland is disturbed by pugging or hummocking from animal hooves **Slight=** Pugging is minimal or shallow/Hummocking has occurred/Vegetation and bank stability is intact or recovering **Moderate=** Pugging is minimal/Hummocks are deep/Wetland is beginning to dry out **Severe=** Hummocks are deep/ Pugging is common/Vegetation is dead or absent	<25% None Occurring **10** Slight **9** Moderate **6** Severe **5**	25-75% Slight **7** Moderate **4** Severe **2**	75-100% Slight **5** Moderate **3** Severe **1**

Hydrogeomorphic Condition Index

***Riverine Index**

For hydrologic disturbance take the sum of the lowest 2 scores (3.1-3.4) and divide by 20:

____+____ **/20** =(____ + *)/2 = ____

*For Riverine Sites use average of Riverine and Hydrogeomorphology Indexes.

Please provide comments for any impacts that scores < 5: _____

_____

Addendum: Hydrogeomorphology – Riverine Wetlands

The *actual* score reflects current condition, and the *potential* is the score that reflects the site without human disturbance (usually the maximum score). For more information, see guidebook.

3.5 Riverine -Downcutting/Incisement: Note: The presence of active headcuts should nearly always keep the stream reach from being rated sustainable.	**Actual:**	**Potential:**
Stable Channel	**8**	**8**
Evidence of downcutting that is beginning to stabilize	**6**	**6**
Small headcuts; channel is in beginning staged of unraveling.	**4**	**4**
Unstable channel that is incised and actively widening; banks failure is common	**2**	**2**
Deeply incised resembling a gully	**0**	**0**
3.6 Riverine - Percent of Stream banks with active Lateral cutting:	**Actual:**	**Potential:**
Lateral bank erosion is in balance with the stream and its setting	**8**	**8**
There is a minimal amount of human-induced, active lateral bank erosion occurring, primarily limited to outside banks.	**5**	**5**
There is a moderate amount of human-induced active lateral bank erosion on either or both outside or inside banks	**3**	**3**
There is extensive human-induced lateral bank erosion occurring on outside and inside banks and straight sections.	**0**	**0**
3.7 Riverine - Stream in Balance with Water and Sediment Supply: Note: Rosgen B and naturally occurring D channels are exceptions.	**Actual:**	**Potential:**
No evidence of excessive sediment removal or deposition, or that the stream is getting wider.	**6**	**6**
The stream has widened and/or become shallower due to unstable banks or from de-watering. New point bars are often forming with silt and sand common	**4**	**4**
The stream tends to be very wide and shallow. Mid channel bars are often present. (See guidebook for prairies streams characteristics)	**2**	**2**
The stream has poor sediment transport. The channel is often braided with at least 3 active channels	**0**	**0**
3.8 Riverine - Floodplain Characterization: *(Rosgen diagrams are available in the handbook)*	**Actual:**	**Potential:**
Little evidence of floodplain erosion	**8**	**8**
Floodplain erosion not extensive	**6**	**6**
Considerable evidence of floodplain erosion and occasional headcuts	**4**	**4**
Erosion and headcuts within the floodplain are extensive. Some human-caused stream bank erosion is occurring	**2**	**2**
The floodplain is very limited or does not exist	**0**	**0**
3.9 Riverine - Streambank with Vegetation (Kind) having a Deep, Binding Rootmass: (see Appendix for stability ratings for most riparian, and other, species)	**Actual:**	**Potential:**
The streambank vegetative communities are comprised of at least four plant species with deep binding root masses	**6**	**6**
The streambank vegetative communities are comprised of at least three plant species with deep binding root masses	**4**	**4**
The streambank vegetative communities are comprised of at least two plant species with deep binding root masses	**2**	**2**
The streambank vegetative communities are comprised of one or no plant species with deep binding root masses	**0**	**0**
3.10 Riverine - Streambank with Vegetation (Amount) having a Deep, Binding Rootmass: (see Appendix for stability ratings for most riparian, and other, species)	**Actual:**	**Potential:**
More than 85% of the floodplain has vegetation with a stability rating greater than or equal to 6	**6**	**6**
75- 85% of the floodplain has vegetation with a stability rating greater than or equal to 6	**4**	**4**
65-75% of the floodplain has vegetation with a stability rating greater than or equal to 6	**2**	**2**
< 65% of the floodplain has vegetation with a stability rating greater than or equal to 6	**0**	**0**

Riverine Index:

Sum the actual scores (3.5-3.10) and divide by the sum of the potential scores (usually the maximum scores):

Actual: _____+_____+_____+_____+_____ =

Potential:_____ +_____+_____+_____ +_____=

[ ] / [ ] = [*]

Please provide comment for any individual score <6

_____

If the potential is not at maximum, please explain

_____

4.0 Vegetation Condition *Vegetation should only be assessed within the wetland assessment area

4.1 Bare Ground	None present/ Minimal <5%	Some Present 5-15%	Common Occurrence 16-25%	Very apparent >25%
How much emergent vegetation is impacted by trampling or other human-caused disturbance?	10	8	4	0

*For Noxious and Disturbance Caused Undesirable plants, look to the abundance of harmful species.

4.2 Invasive and Disturbance caused undesirable plants **(Rank 3 most common and check all other observations)**	None present	Some small patches are often present <5%	Patches are large or commonly present 6-25%	Patches are large and extensive or Wetland is Dominated >25%
_____Reed Canary grass _____Smooth brome _____Quack grass _____Kentucky bluegrass _____Creeping Bent grass _____Meadow Foxtail _____Tall Fescue _____Timothy _____Sweet Clover _____Russian Olive	10	7	5	2
4.3 Noxious Weeds **(Rank 3 most common and check all other observations)**	None present	Some small patches are often present <5%	Patches are large or commonly present 6-25%	Patches are large and extensive or Wetland is Dominated >25%
____Tamarisk (Salt Cedar) ____Canada Thistle ____White Top Cress ____Spotted Knapweed ____Leafy Spurge ____Purple Loosestrife ____Yellowflag Iris ____Eurasian Milfoil	10	6	3	0

Is woody vegetation present? Yes_____ No_____ *Skip the rest of this section if the site does not have the potential for tall shrubs or trees or woody vegetation is not present due to natural causes *(not human impacts or removal).*

4.4 Woody Species Establishment and Regeneration	**Actual**	**Potential**
All age classes of desirable woody species present (see Guidebook).	**10**	**10**
One age class of desirable woody species is clearly absent, all others well represented. Often, it will be the middle age group(s) absent.	**6**	**6**
Two age classes (seedlings and saplings) of native shrubs and/or two age classes of native trees are clearly absent, or the stand is comprised of mainly mature species. Other age classes well represented.	**4**	**4**
Disturbance induced, (i.e., facultative, facultative upland species such as rose, or snowberry) or non-wetlands dominate. Woody species present consist of decadent/dying individuals	**2**	**2**
A few woody species are present (<10% canopy cover), but herbaceous species dominate (at this point, the site potential should be re-evaluated to ensure that it has potential for woody vegetation). OR, the site has at ≥ 5% canopy cover of Russian olive and/or salt cedar.	**0**	**0**
4.5 Utilization of trees and shrubs:	**Actual**	**Potential**
Few to none of the available second year and older stems are browsed	**10**	**10**
Second year and older stems lightly browsed	**8**	**8**
Second year and older stems are moderately browsed.	**6**	**6**
Second year and older stems are heavily browsed. Many of the shrubs have either a "clubbed" growth form, or they are high-lined or umbrella shaped.	**2**	**2**
There is noticeable use (10% or more) of unpalatable and normally unused woody species	**0**	**0**

4.6 Percent of physical removal of tree/shrub layer or dead wood caused by concentrated livestock trampling and rubbing, drying out of site due to stream incisement, human-caused wetland drainage or flooding, etc.	**<5**	**5-25**	**26-50**	**51-75**	**76-100**
	10	**8**	**5**	**2**	**0**

Vegetation Condition Index

Sum all scores and divide by the total possible for the assessment area. 60 for sites with woody species (shrubs and tree); 30 for sites with only herbaceous vegetation).

Only Herbaceous (4.1-4.3): **_____+_____+_____= _____/30**

For Herbaceous and woody vegetation (4.1- 4.6):
(_____/10 +_____/10+_____/10 + actual/potential + actual/potential + _____/10) /6 = _____

Please provide comments for any individual scores less than 6:_____

If the potential is not at maximum, please explain:

5.0 Water Quality Is water present? Yes____ No____ *Skip this section if water is not present

5.1 Algae and Duckweed Large patches means 50%	Algae growth is minimal **10**	Algae growth in small patches **8**	Algae growth in large patches **4**	High level of algae growth in continuous mats with odor from rotting vegetation **0**
5.2 Is Wetland Dominated by Cattails? *Dominated means 70% Do not include any open water component.	Yes **4**	No **10**		

5.3 Sediment and Turbidity

Is there evidence of excessive sediment levels caused by human activities? (e.g. bare ground, row crops, erosion, etc. Do not include trapped sediment due to beaver damming)	No evidence / Slight *10*	Moderate *4*	High *0*	**Average Sediment and Turbidity Score:** _____+_____/2= **10 9 8 7 6 5 4 3 2 0**
Is the Water Turbid?	No Turbidity/ Slight *10*	Moderate *8*	High 6	

5.4 Surface oils & foams *Do not consider sheen for vegetation decomposition (Should be evidence of human caused source)	No evidence of surface oils or foams **10**	Evidence of surface oils or foams **3**	The wetland is covered with surface oils or foams **0**
5.5 Toxics- (e.g. Metals from mine tailings, hydrocarbon organic materials, or, Pesticides)	No evidence of toxics **10**	Evidence of toxics, however aquatic life is abundant and diverse **5**	Evidence of toxics. Only tolerant aquatic life are found **0**
5.6 Salinity *Conductivity measurements are not necessary	No evidence of saline seeps Conductivity < 3000 uS/cm **10**	Moderate evidence of saline seeps Conductivity 3000-15000 uS/cm **5**	Significant evidence of saline seeps Conductivity >15000 uS/cm **0**
* Are saline seeps, fallow croplands, oil brines, or severe overgrazing present within 3 miles? **Yes No Not Sure**			

Water Quality Condition Index: Sum the lowest 2 scores (5.1-5.6) and divide by 20:

_____+_____ =_____ /20 = ☐

Please comment on any individual scores < 6: _____

6.0 Buffer Condition/ Degree of Stress

Stressors in 100 meter buffer	None present Very few present /Minimal *Small Patches*	Common Occurrence *Large patches within Buffer*	Very apparent and extensive Distribution *Extensive Large Patches throughout entire Buffer*
6.1 Amount of bare ground	10	**Slope** Flat 6 Moderate 4 Steep 3	**Slope** Flat 4 Moderate 2 Steep 1
6.2 Noxious weeds (Use Montana Noxious Weed Pamphlet)	10	2	0
6.3 Disturbance- caused undesirable plants	10	4	0
Degree of Stress in Buffer	None Occurring/Slight	Moderate	Severe
6.4 Grazing intensity in 100 meter buffer	10	**Slope** Flat 7 Moderate 5 Steep 4	**Slope** Flat 4 Moderate 2 Steep 1
6.5 Recreational Activities (e.g. campground, fishing access point, etc.)	10	**Slope** Flat 7 Moderate 5 Steep 4	**Slope** Flat 4 Moderate 2 Steep 1

Slope

Flat= <2 percent grade

Moderate= 2-10 percent Grade

Steep= >10 percent grade

Percent of 100m buffer occupied by stressor	<5	5-25	25-50	>50
6.6 Hayfield	10	8	6	4
6.7 Row Crops	10	**Slope** Flat 7 Moderate 5 Steep 4	**Slope** Flat 4 Moderate 2 Steep 1	**Slope** Flat 2 Moderate 0 Steep 0
6.8 Clear cuts, new growth less than 3 feet tall	10	**Slope** Flat 7 Moderate 5 Steep 4	**Slope** Flat 5 Moderate 3 Steep 2	**Slope** Flat 3 Moderate 1 Steep 0
6.9 Feedlot or concentrated livestock watering	10	3	2	0
6.10 Residential Development	10	9	6	0
6.11Human constructed dams or dikes: *often indicates unnatural wetlands*	Not Present 10	Present 7		
	None Present	1-5%	5-25%	>25%
6.12 Human- induced saline seeps were observed	10	7	4	0
6.13 Industrial or Commercial Activities	10	7	4	0
6.14 Oil and Gas Development	10	7	4	0

6.15 Were any of these stressors observed within 100- 500m from the Wetland? (Please circle)

Row Crops **Oil and Gas Development** **Recreational Activities (e.g. campground, fishing access point, etc.)**

Human- induced saline seeps were observed **Hayfield** **Feedlot/concentrated livestock watering**

Industrial or commercial Activities **Roads/ Railroad Grades** **Clear cuts (new growth less than 3 feet tall)**

Residential Development **Dams or Dikes upstream (Riverine Sites)**

Distance of road from wetland	> 100 meters	50-100 meters	10-50 meters	<10 meters
6.16 2-track dirt road *Up Slope*	10	6	4	2
6.17 Other 2-track dirt road	10	8	6	4
6.18Dirt and gravel roads, railroad grades *Up Slope*	10	4	2	1
6.19All other dirt and gravel roads, railroad grades	10	6	4	2
6.20Paved Roads *Up Slope*	10	2	1	0
6.21Other Paved Roads	10	4	2	1

Buffer Condition Index

Sum the four lowest scores circled and divide by the total possible for the Assessment area (40). _____+_____+_____+_____=_____/**40 =** ☐

7.0 Restorability

Circle the appropriate category and sub-category and describe how the wetland is trending (when appropriate):

Comments:_____

7.1 How easily can the wetland be restored?	***Category A:*** No observed impacts; Wetland does not need to be restored.	***Category B:*** Some slight impacts that can be fixed or restored with minimal expense and effort (e.g. adding fencing).	**Category C** More significant impacts or disturbances within the buffer area that can be removed. (such as a change in land use practices: e.g. crop land changed to pasture, cattle tank or abundant noxious weeds) Restoration would require some expense and effort.	***Category D:*** Serious impacts and stressors are not economically feasible to remove/restore. (e.g., highway or fixed permanent infrastructure)
7.2 Wetland Trend towards natural restoration	***Sub-Category 1:*** Wetland condition is trending upward.	***Sub-Category 2:*** Wetland condition appears to be stable.	***Sub Category 3:*** Wetland condition is trending downward.	***Sub-Category 4:*** Wetland condition trend can not be determined

Summary of Rating

Hydrogeomorphic Condition Index …… ...	
Vegetation Condition Index……	
Water Quality Condition Index ……	
Buffer Condition/**Stressor Score……...**	

Wetland Impact Score Calculation:

If there is surface water multiply the hydrogeomorphic condition index by 0.4; the vegetation condition index by 0.4; the water quality condition index by 0.2.

If there is no surface water multiply the hydrogeomorphic condition index by 0.5; the vegetation condition index by 0.5.

Wetland Impact Score……..	

Overall Score calculations:

If there is surface water multiply the hydrogeomorphic condition index by 0.3; the vegetation condition index by 0.3; the water condition index by 0.2; and the buffer condition/ Stressor index by 0.2. Sum the indexes to determine the overall condition index score.

If there is no surface water multiply the hydrogeomorphic condition index by 0.4; the vegetation condition index by 0.4; the buffer condition/ Stressor index by 0.2; Sum the indexes to determine the overall condition index score.

Overall Score……	*

*** This score is not an indication of wetland impairment status. This form is used to record observations only. The form can be submitted to Department of Environmental Quality for professional review to assist in evaluating wetland condition.**

Overall condition index >0.9-1.0: **Excellent Condition**	Overall condition index >0.5-0.7: **Fair condition**
Overall condition index >0.7-0.9: **Good Condition**	Overall condition index 0.0-0.5: **Poor Condition**

Rank Stressors:

Choose from this picklist and rank all stressors starting with 1 (highest)

Grazing	**Point Source Contamination**	**Oil/Gas Development**
Mining	**Residential Development**	**Dredging/Filling**
Row Crops	**Human Recreation**	**Feedlot/Cattle Watering**
Road/Railroad(s)	**Industrial Development**	**De-Watering**
Dam/Dike/Weir	**Forestry/Clear cutting**	**Hay Meadow**
Extensive Noxious Weeds		